CLAIMS

1. A method for the controlling and regulating of a transmission brake of an automatic transmission constructed with a countershaft, having a transmission input shaft, with at least one countershaft driven by the transmission input shaft and with a transmission output shaft,

wherein, upon the transmission input shaft, on the countershaft and/or on the transmission output shaft loose gears are rotatably supported and/or fixed gears are non-rotatably placed, which at least stand in a pair forming mesh grip with one another,

whereby the loose gears can be non-rotatably bound with their transmission shaft for the carrying out of a gear change by means of a coupling apparatus,

as well as with a transmission brake, with which the countershaft, controlled by a control device can be braked upon an upshift procedure in such a way that the speed of rotation thereof corresponds to the engagement point in time of the synchronous speed of rotation or approaches this condition up to a predetermined tolerance,

whereby for the determination of the disengagement point in time of the transmission brake, the brake rate of change of t speed of rotation of the countershaft, i.e., of the transmission input as well as the rate of change of speed of rotation of the transmission output shaft are given consideration,

therein characterized, in that the transmission brake, under consideration of a lead time, is disengaged prior to the calculated disengagement point of time.

2. A method in accord with claim 1, therein characterized, in that the lead time for a transmission brake inserted into an automatic transmission is determined at least once individually and/or adaptively at predetermined time periods, or is determined by repeated adaptive computations of this lead time at each upshifting procedure.

3. A method in accord with claim 1 or claim 2, therein characterized, in that the lead time is computed with consideration of the quality of a completed

upshifting procedure, especially with consideration given to the synchronous run of the rotating components of the transmission taking part in the shifting procedure.

4. A method in accord with claim 3, therein characterized, in that the evaluation criterion for the quality of a completed upshifting procedure is the achieving of a predetermined targeted speed of rotation window (3) by the transmission input speed of rotation (1) because of the brake engagement, whereby the upper speed of rotation of the targeted speed of rotation window (3) lies under the set transmission input speed of rotation (2) following the upshift procedure.

5. A method in accord with at least one of the foregoing claims, therein characterized, in that the value for the lead time for future upshifting procedures remains constant, if the engagement procedure is carried out with a transmission input speed of rotation (5) which lies within the targeted speed of rotation window (3) and in that the lead time is computed anew, if the engagement procedure is established by a transmission input speed of rotation (6; 7) which lies outside of the targeted speed of rotation window (3).

6. A method in accord with claim 5, therein characterized, in that, under circumstances wherein the engagement procedure is carried out on a speed of rotation basis underneath the targeted speed of rotation window (3), wherein the lead time for the next upshifting procedure is extended for a predetermined time interval, while the lead time is shortened for a predetermined time interval if the engagement procedure is carried out on a speed of rotation above the targeted speed of rotation window (3).

7. A method, in accord with claim 5, therein characterized, in that for the computation of a new lead time, the maximum speed of rotation rate of change (10) of the transmission input speed of rotation (1) is determined during a running upshifting procedure and in that the speed of rotation difference (11) between the transmission input speed of rotation (8) is determined during the engagement procedure and the mid-point (9) of the targeted speed of rotation window (3) and in that by the division of the speed of rotation difference (11) is determined by the maximal speed of rotation rate of change (10) of the altering

value for the next upshifting procedure and in that by the applying of this altering value the new lead time for the next upshifting procedure can be computed.